

**REMARKS**

Claims 7 and 9-11 are pending in this application. By this Amendment, claims 1, 2, 5 and 8 are canceled and claims 9-11 are added. Support for the amendments to the claims may be found, for example, in the specification at page 7, lines 21-30; page 8, lines 29-31; and page 9, lines 18-25. No new matter is added.

**I. Rejection Under 35 U.S.C. §103****A. Ogura**

The Office Action rejects claims 1, 5 and 8 under 35 U.S.C. §103(a) over Japanese Unexamined Patent Publication No. 10-258232 to Ogura et al. (herein "Ogura"). By this amendment, claims 1, 5 and 8 are canceled, rendering the rejection moot as to those claims. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

**B. Ogura in View of Wright**

The Office Action rejects claim 2 under 35 U.S.C. §103(a) over Ogura in view of Sol-Gel Materials: Chemistry and Applications, 2001, CRC Press, Section 1.3 to Wright et al. (herein "Wright"). By this amendment, claim 2 is canceled, rendering the rejection moot. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

**C. Ogura in View of Wright and Pinnavaia**

The Office Action rejects claim 7 under 35 U.S.C. §103(a) over Ogura in view of Wright and further in view of U.S. Patent No. 4,981,825 to Pinnavaia et al. (herein "Pinnavaia"). Applicants respectfully traverse the rejection.

The instantly claimed process provides that the pH of the solution containing a ceria sol and an alumina and/or silica sol be adjusted closer to the isoelectric point of the alumina and/or silica sol, and to fall within  $\pm 2.0$  of the isoelectric point of the alumina and/or silica sol. The resulting pH creates a zeta potential on the particle surface of the alumina and/or

silica sol to be small thereby allowing for less generation of electrical repulsion between the alumina and/or silica sol particles and facilitating aggregation of the sol (see specification at page 6, line 28 to page 7, line 20). However, since the isoelectric point of the ceria sol differs more than 3.5 from that of the alumina and/or silica sol, the ceria sol comes to have a large zeta potential, and large electrical repulsion is generated between ceria sol particles such that aggregation of the sol particles becomes difficult. Through the instantly claimed process, the alumina and/or silica sol aggregate to form particles and ceria deposits on the surface of these particles. Therefore, the derived metal oxide particles contain a core rich in alumina and/or silica and a surface layer rich in ceria. Such a process would not have been obvious over the cited references.

The Office Action acknowledges that Ogura does not teach adjusting the pH of the solution. However, the Office Action asserts that Pinnavaia teaches decreasing the pH of the silica sol gel from 10 to 3 by adding HCl (see Example 1 of Pinnavaia) and, thus, it would have been obvious for one of ordinary skill in the art to have added a calculated amount of HCl to the core components of Ogura because this is one specific way of reaching a necessary isoelectric point. Applicants respectfully disagree with this assertion.

Pinnavaia actually discloses that "the pH of this solution was then decreased from about 10 to about 3 by adding 1.2 mL 0.5N HCl. This reduction in pH was carried out to ensure a positive charge on the surface of the sol particles. The solidified solution was stirred for 20 minutes. This step was followed by the addition of 10 g of a 1 wt.% suspension of Na<sup>+</sup>-montmorillonite." In other words, the pH in Pinnavaia is adjusted to give a positive charge on the surface of the sol particles. Pinnavaia does not specifically teach adjusting the pH to be closer to the isoelectric point of the sol. Therefore, Pinnavaia teaches away from, or at least is irrelevant to, instant claim 7, wherein the pH is adjusted to be closer to the isoelectric point of the alumina and/or silica sol and thereby facilitate aggregation thereof.

Furthermore, Ogura, Wright, and Pinnavaia fails to teach or suggest using two kinds of sols that have isoelectric points differing more than 3.5 from each other in order to facilitate aggregation of particles of a sol by generating less electrical repulsion between the sol particles and, at the same time, to prevent aggregation of particles of another sol by generating large electrical repulsion between the sol particles.

For at least these reasons, claim 7 would not have been rendered obvious by Ogura, Wright, and Pinnavaia. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

## **II. New Claims**


By this amendment, new claims 9-11 are presented. New claims 9-11 depend from claim 7 and, thus, distinguish over the applied references for at least the reasons discussed above with respect to claim 7. New claims 9-11 are believed to be patentable over the applied references. Prompt examination and allowance of new claims 9-11 are respectfully requested.

## **III. Conclusion**

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of the application are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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Attachment:  
Petition for Extension of Time

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